

Request for No Further Remedial Action Planned

Site: Gas Station and Garage, also known as Two Party Agreement (TPA) Site 9n and National Oceanic and Atmospheric Administration (NOAA) Site 49. The site will be referred to as the “site” herein.

Location: St. Paul Island, Alaska is approximately 800 miles southwest of Anchorage in the Bering Sea. On the island, the site is situated in St. Paul Village near St. Paul Harbor (Figures 1 and 2), approximately 250 feet (ft) northwest of the Cascade Building (57°07'25.88" North Latitude, 170°16'53.25" West Longitude).

Legal Property Description: The area of excavation is located in Tract 46, Township 35 South, Range 132 West, of the Seward Meridian, Alaska, as shown on the dependent resurvey of a portion of U.S. Survey No. 4943, Alaska, Tract "A", St Paul Townsite, officially filed June 3, 1997 (Figure 2). [Note: TPA site boundaries are not defined in the TPA. At its discretion, NOAA established a boundary for this TPA site based on site characterization data and historic information.] NOAA owns the site.

Type of Release: Potential release mechanisms include: 1) leaks associated with the storage of diesel fuel in one underground storage tank (UST); and 2) leaks associated with fuel dispensation at the gas station.

History and Background:

The site is located in St. Paul Village near St. Paul Harbor, approximately 200 ft northwest of the Cascade Building and 100 ft northeast of the Municipal Garage (Figures 3 and 4). An UST serviced a former fuel station located on the site (BESC 1997). The 300-gallon capacity tank stored gasoline. The period of use for the gas station is not known, however the gas station’s garage building is evident in a 1943 aerial photograph, and the gas station was no longer in service by the mid-1990s when a site investigation was performed at the site (Hart Crowser 1997).

The site is currently used for storage of small boats by local fisherman, and is within the industrial area of St. Paul Village (Figure 4).

Summary of Site Investigations:

In 1995, Hart Crowser collected soil samples to assess the nature and extent of chemical contamination in soils at several locations on St. Paul Island, including the site (Hart Crowser 1997). A hand auger boring (HA-6) provided a single sample at 0.5 ft below ground surface (bgs); refusal at 1.8 ft bgs prohibited deeper auger penetration. Additional samples came from a test pit (TP-11) at depths ranging from 0-4.5 ft bgs (Figure 3). All samples were analyzed in a field laboratory and in an off-site project laboratory, with analyses and results as indicated in Table 1.

Hart Crowser’s field laboratory detected residual-range organics (RRO), quantified as “oil,” at a maximum concentration of 5,200 milligrams per kilogram (mg/kg), less than the ADEC Method

Two cleanup level of 10,000 mg/kg (Figure 3). No other contaminants were detected in the samples analyzed by the field laboratory.

The off-site project laboratory detected gasoline-range organics (GRO) in sample HA-6/S-1 at 2.1 mg/kg and 1.6 mg/kg in TP-11/S-1, which are below the ADEC Method Two cleanup level of 300 mg/kg. Total petroleum hydrocarbons (TPH) were detected in sample HA-6/S-1 at 2,100 mg/kg, which contrasts with the 5,200 mg/kg concentration detected by the field laboratory noted above. ADEC Method Two does not provide a cleanup level for TPH. No other contaminants were detected in the samples analyzed by the off-site project laboratory.

In 2000 and 2001, Columbia Environmental Sciences Inc. (CESI) installed groundwater monitoring wells and took soil borings in the City of St. Paul as part of a site characterization effort (CESI 2001). No wells were installed at this site, and consequently no soil samples were collected from this site. Monitoring wells were installed both upgradient (MW46-10, MW46-28) and downgradient (MW46-14) of the site (Figures 4 and 5).

NOAA contractors conducted quarterly groundwater monitoring from September 2000 to September 2001 and from October 2003 to July 2004 in the vicinity of the site. Groundwater in the vicinity of the site is thought to flow northerly away from the site, toward St. Paul Harbor (Figure 5), according to Mitretek Systems (Mitretek 2002). DRO, GRO and benzene exceeded ADEC Table C cleanup criteria in wells MW46-10 and MW46-28, upgradient of the site; toluene also exceeded its cleanup criterion in MW46-28. DRO detections in well MW46-14, downgradient of the site, did not exceed the most stringent Table C cleanup criterion of 1,500 µg/L during 2003-2004 sampling (Figure 4).

No other contaminants were found at these wells above their ADEC Table C cleanup levels. One should note that these wells are within or potentially downgradient of other source areas including TPA Site 9e (Municipal Garage/Machine Shop) and TPA Site 9f (Cascade Building).

Mitretek Systems (2002) evaluated the 2000-2001 groundwater data for the St. Paul Village area, which includes the site. The Mitretek report demonstrated that groundwater in the vicinity of St. Paul Village has high total dissolved solids and can be brackish. Consequently, the groundwater in the area is not suitable for drinking water. The evaluation, in part, provided a rationale for using alternative groundwater cleanup levels that are protective of human health and the environment where the groundwater is not potable. Mitretek concluded in accordance with 18 AAC 75.350 (ADEC 2003a) that groundwater in the Village area is not currently used and does not afford any potential future use as a drinking water source.

These findings provided the basis for the application of the Ten Times Rule discussed below.

Summary of Applied Cleanup Levels:

NOAA employed ADEC Method Two cleanup criteria, discussed at 18 AAC 75.341(c) (ADEC 2003a). Alternative cleanup levels were also applied for some compounds. For benzene, under the TPA, NOAA had the option to cleanup to the less stringent State of Alaska cleanup level in effect in 1991 (ADEC 1991). Additionally, NOAA proposed and ADEC approved the use of

alternative cleanup levels under 18 AAC 75.345 and 18 AAC 75.350, commonly referred to as the Ten Times Rule (ADEC 2002, Mitretek Systems 2002). According to these regulations, if groundwater beneath a site contains contaminant concentrations above the cleanup levels provided in ADEC Table C, then the soil may be remediated to levels ten times higher than those provided in Method Two Tables B1 and B2 for the migration to groundwater pathway for those contaminants found in groundwater at concentrations above the cleanup levels provided in ADEC Table C; however, if the inhalation or ingestion pathway values are more stringent than the migration to groundwater pathway, then the more stringent value is to be applied. ADEC uses 15 feet below ground surface (bgs) to define subsurface soil to which residents will have a reasonable potential to be exposed through the inhalation or ingestion pathways (ADEC 2003a; 18 AAC 75.340 (j)(2)). Therefore NOAA is not obligated to excavate contaminated soil occurring at depths deeper than 15 feet to address the inhalation and ingestion pathways. Cleanup criteria were applied to the maximum extent practicable (18 AAC 75.325 (f), 18 AAC 75.990).

Summary of Cleanup Actions:

Corrective action activities for the site were performed in July 1997 (BESC 1997). The gasoline UST was accessed and found to contain approximately 10 gallons of residual fluids, which were removed from the tank and reused as fuel on island. The 300 gallon UST was removed from the site and cleaned, then was decommissioned by disposal off-island consistent with ADEC regulations. The excavation remaining from the UST removal was approximately 7 ft by 5 ft laterally and extended 5 ft bgs. The soil surrounding the UST was damp, brown, poorly graded sand with silt and gravel. A photo-ionization detector was used to screen the soil in the tank excavation, and the readings were zero units (*i.e.* no instrument deflection) throughout the excavation (BESC 1997). During this corrective action, no PCS was removed from the excavation at the site.

Two confirmation samples were collected from the bottom of the excavation and the test pit for laboratory analyses including benzene, toluene, ethylbenzene, and total xylenes (BTEX); GRO; and total lead (Figure 6). Specifically, sample 300F was collected about 1 ft below the fill end of the UST and sample 300C was collected about 1 ft below the center of the UST.

Table 1 provides a summary of the confirmation sampling data. Confirmation samples collected from the excavation at the site indicated all contaminants of concern were below the ADEC Method Two cleanup levels in the confirmation samples. Thus, the site was remediated as a clean closure with no land use restrictions necessary for the vadose zone soil. Site contamination has not impacted groundwater at or in the vicinity of the site.

Laboratory reporting limits were below ADEC Method Two cleanup levels for all contaminants except benzene. For benzene, reporting limits of 0.025 mg/kg or lower were achieved, which is above the ADEC Method Two cleanup level of 0.02 mg/kg, but below the alternative cleanup level of 0.5 mg/kg.

The excavation was backfilled following the collection of fixed laboratory confirmation samples. Backfill operations involved transporting clean fill material from an on-island source, though the

actual borrow material source is not known (BESC 1997). The area of excavation was restored to its original grade.

Recommended Action:

In accordance with paragraph 59 of the Two Party Agreement (NOAA 1996), NOAA requests written confirmation that NOAA completed all appropriate corrective action at the Gas Station and Garage, TPA Site 9n/NOAA Site 49 in accordance with the Agreement and that ADEC requires no further remedial action plan from NOAA.

References:

Alaska Department of Environmental Conservation (ADEC). 1991. Interim Guidance for Non-UST Contaminated Soil Cleanup Levels, Contaminated Sites Program. July 17, 1991.

ADEC. 2002. Letter from Louis Howard, Project Manager, Alaska Department of Environmental Conservation, to John Lindsay, Project Manager, NOAA Pribilof Project Office regarding ADEC conditional approval for applying the Ten Times Rule. May 30.

ADEC. 2003a. Title 18 of the Alaska Administrative Code 75, Articles 3 and 9. Oil and Hazardous Substances Pollution Control Regulations. State of Alaska. January 30.

ADEC. 2003b. 18 AAC 78. Underground Storage Tanks. State of Alaska. January 30.

Bristol Environmental Services Corporation (BESC). 1997. UST Removal and Closure Report, St. Paul Island, Alaska, 300 Gallon UST, Facility Identification Number 3048, UST Number 7. BESC. September 24.

Columbia Environmental Sciences, Inc. 2001. Draft Site Characterization Report, Tract 46 and Vicinity (TPA Site 9), St. Paul Island, Alaska. Version 2.1. CESI. Kennewick, WA. December 16.

Hart Crowser, Inc. 1997. Expanded Site Inspection of St. Paul Island, Pribilof Islands, Alaska. January.

IT Alaska Corporation. 2002. Draft Annual Groundwater Monitoring Report 2001, St. Paul Island, Alaska. March.

Mitretek. 2002. Groundwater Use and Classification in the Vicinity of Tract 46, St. Paul Island, Pribilof Islands, Alaska. Prepared by Mitretek Systems, for the National Oceanic and Atmospheric Administration. June 5.

National Oceanic and Atmospheric Administration (NOAA). 1996. Pribilof Islands Environmental Restoration Two Party Agreement. Attorney General's Office File No. 66 1-95-0126, National Oceanic and Atmospheric Administration. January 26.

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Gas Station and Garage, TPA Site 9n/Site 49
St. Paul Island, Alaska**

For the National Oceanic and Atmospheric Administration

John Lindsay
NOAA, Pribilof Project Office

Date

Approvals: In accordance with Paragraph 59 of the Two Party Agreement, this is to confirm that all corrective action has been completed at the Gas Station and Garage, TPA Site 9n/NOAA Site 49, in accordance with the Agreement and that no plan for further remedial action is required.

For the Alaska Department of Environmental Conservation

Louis Howard
Alaska Department of Environmental Conservation
Remedial Project Manager

Date

Tables and Figures

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Table 1. Analytical Data Summary for Samples from the Gas Station and Garage, TPA Site 9n/NOAA Site 49, St. Paul Island, Alaska

Sample Number	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	TPH (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)	Lead (mg/kg)
NOAA Site 49/TPA Site 9n Characterization Samples										
TP-11/S-1 (FL)	1.5	0.05 U	0.05 U	0.05 U	0.05 U	--	10 U	20 U	450	--
TP-11/S-1 (PL)	1.5	--	--	--	--	--	1.6	--	--	--
TP-11/S-2 (FL)	4.5	--	--	--	--	--	10 U	20 U	50 U	--
TP-11/S-2 (PL)	4.5	--	--	--	--	27 U	--	11 U	--	--
HA-6/S-1 (FL)	0.5	0.05 U	0.05 U	0.05 U	0.05 U	--	10 U	20 U	5,200	--
HA-6/S-1 (PL)	0.5	--	--	--	--	2,100	2.1	--	--	--
NOAA Site 49/TPA Site 9n Corrective Action Confirmation Samples										
300C (PL)	5	0.02 U	0.02 U	0.02 U	0.02 U	--	2	--	--	20
300F (PL)	5	0.02 U	0.02 U	0.02 U	0.02 U	--	1 U	--	--	20
ADEC Method Two Cleanup Level^a										
		0.02	5.4	5.5	78	NA	300	250	10,000	400 ^d
Alternative Cleanup Level^b										
		0.5 ^c	54	NA	NA	NA	1,400	2,500	NA	NA

Notes:

bold Indicates concentration above cleanup levels. Although reporting limits for benzene sometimes exceeded the ADEC Method Two cleanup level of 0.02 mg/kg, reporting limits did not exceed the alternative cleanup level of 0.5 mg/kg.

ADEC Alaska Department of Environmental Conservation

bgs Below ground surface

BTEX Benzene, toluene, ethylbenzene, and total xylenes

DRO Diesel-range organic compounds

FL Field Laboratory Result

GRO Gasoline-range organic compounds

J Analyte was positively identified, but concentration is estimated; result is considered qualitatively acceptable, but quantitatively unreliable.

mg/kg Milligram per kilogram

-- Not analyzed

NA Not available

PL Project (i.e. Fixed) Laboratory Result

RRO Residual-range organic compounds

TPA Two-Party Agreement

U The analyte was analyzed for, but was not detected above the sample reporting limit.

a Cleanup level is from Title 18 of the *Alaska Administrative Code* 75 "Oil and Hazardous Substances Pollution Control Regulations," published by the

b Cleanup level obtained from ADEC Method Two based on the 1991 cleanup level, as referenced in Section 5.0 of the corrective action plan (National

c Under the TPA, NOAA is required to comply with the 1991 ADEC cleanup level for benzene (0.5 mg/kg).

d Although this site is located in an industrial area, NOAA is using the residential cleanup level for lead (400 mg/kg).

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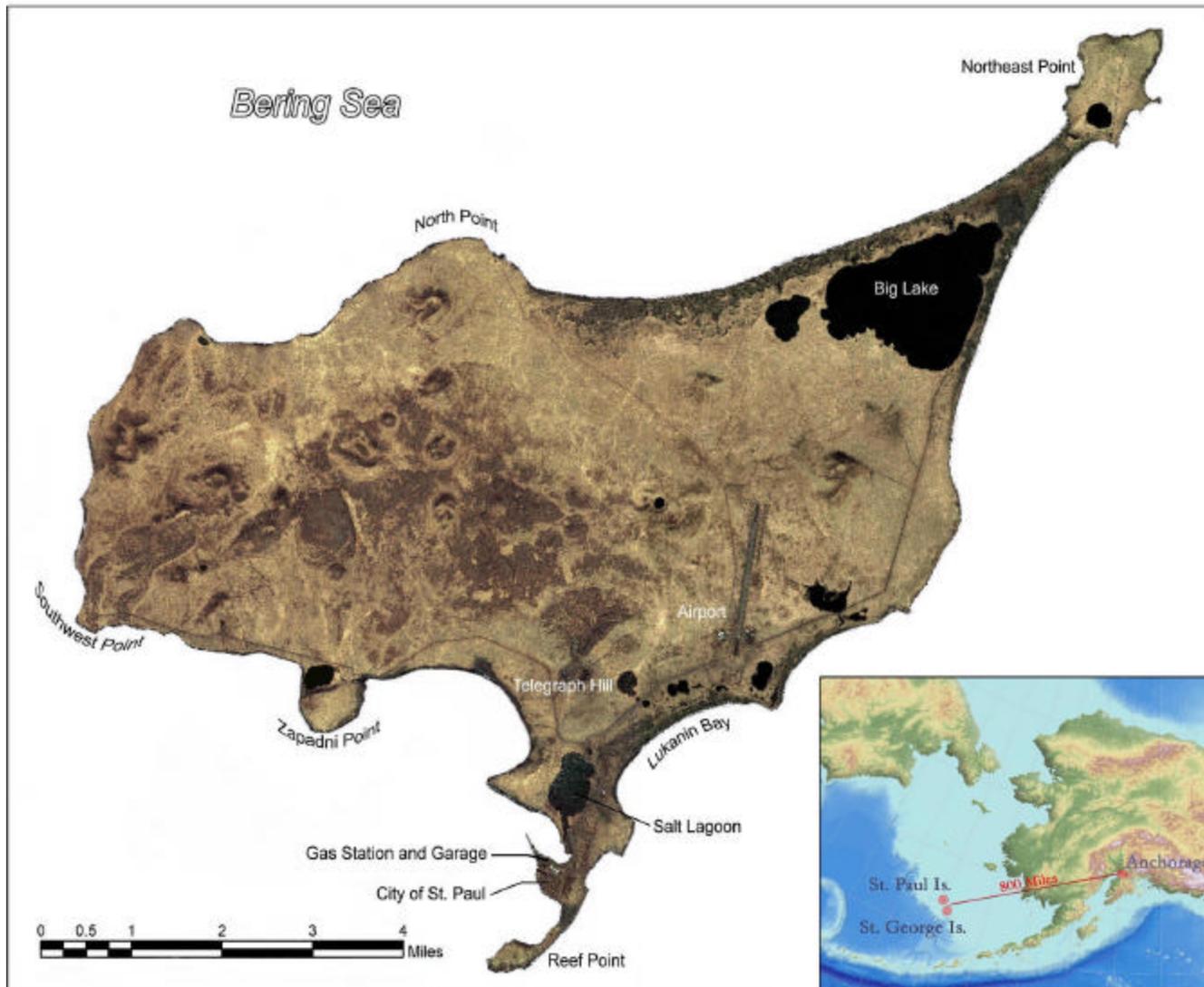


Figure 1	St. Paul Island Vicinity Map Gas Station and Garage NOAA Site 49/TPA Site 9n St. Paul Island, Alaska	Source: Ikonos Satellite Imagery, 2001	
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<p>Figure 2</p>	<p>Legal Property Description Map Gas Station and Garage NOAA Site 49/TPA Site 9n St. Paul Island, Alaska</p>	<p>Sources: BLM Tracts (BLM MTPs 1983), TPA 9n Boundary (NOAA GIS 2004), Aerial Photo (Aeromap US 1996).</p>
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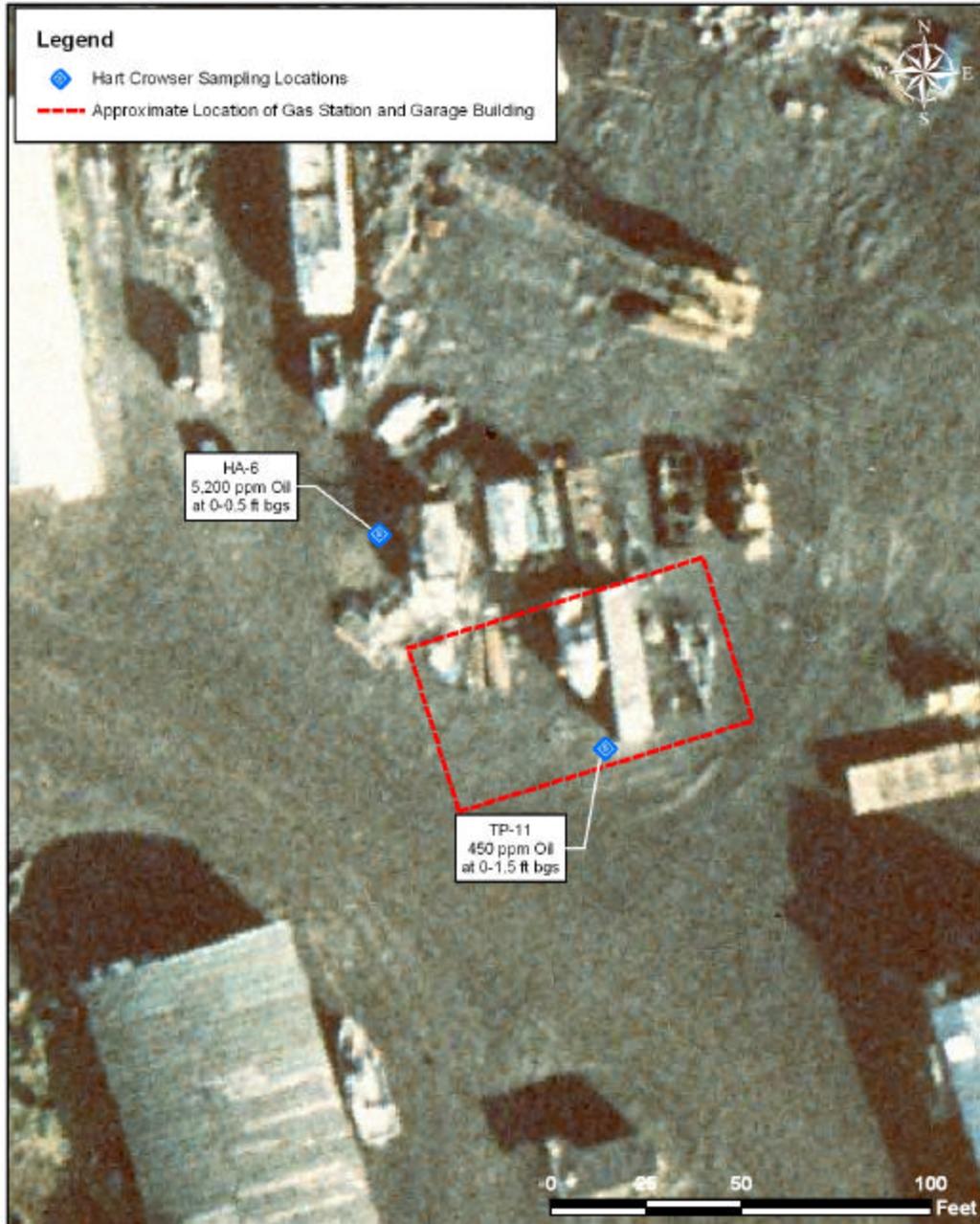


Figure
3

Historical Sampling Locations
Gas Station and Garage
NOAA Site 49/TPA Site 9n
St. Paul Island, Alaska

Sources: Building and
Sample Locations (Hart
Crowser 1997), Aerial
Photo (Aeromap US
1996).



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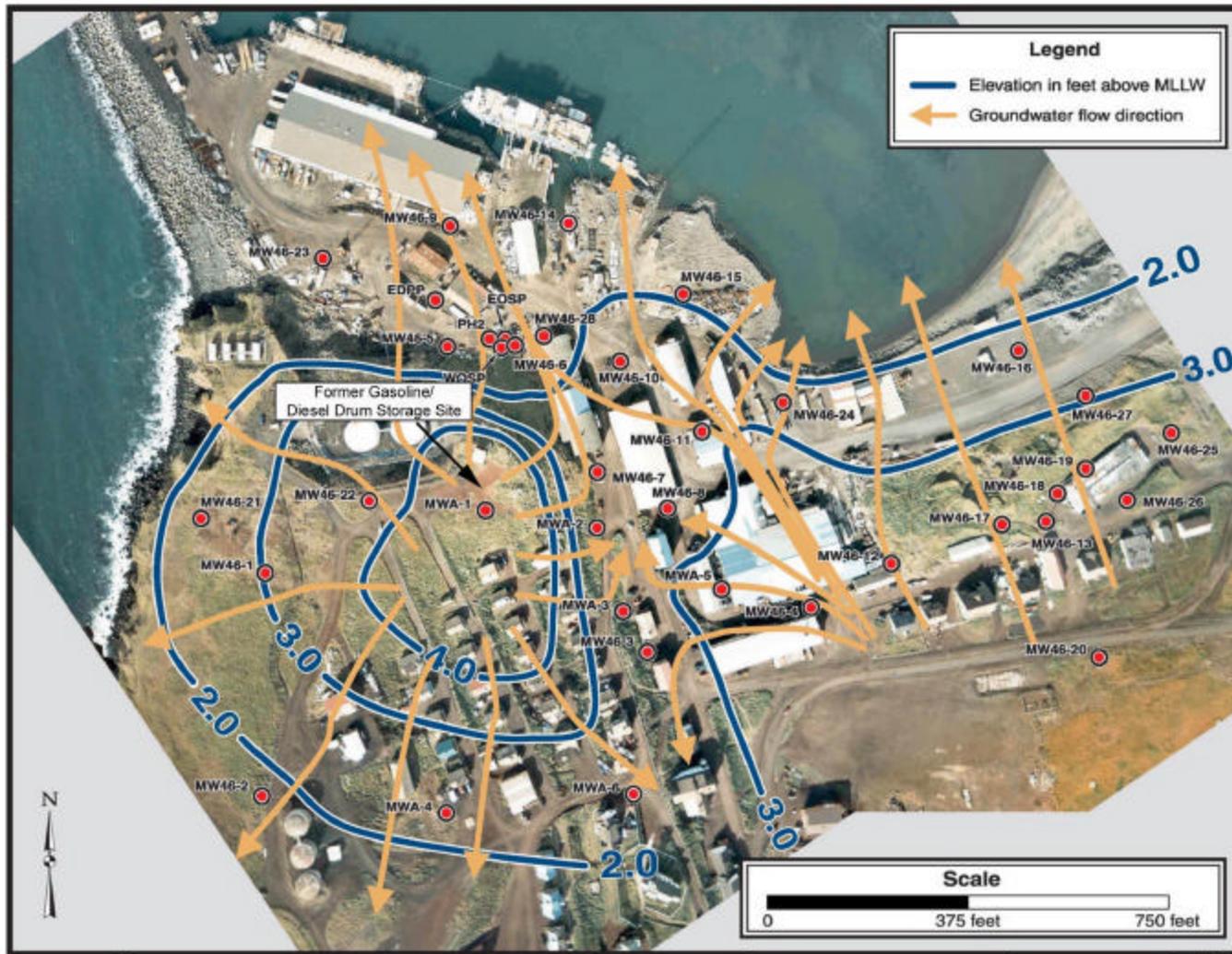


Figure 5 Mean Groundwater Level Contours and Flow Direction Gas Station and Garage NOAA Site 49/TPA Site 9n St. Paul Island, Alaska

Source: Mitretek, 2002.



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Figure	Area of Excavation and Confirmation Sampling Results Gas Station and Garage NOAA Site 49/TPA Site 9n St. Paul Island, Alaska	Sources: Building Location (Hart Crowser 1997), Well Locations (NOAA GPS 2004), Excavation Extent and Sampling Locations (Bristol Environmental 1997), Aerial Photo (Aeromap US 1996)
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